UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/446,769	05/05/2000	KAZUE NAKAMURA	450118-4848	2863

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EXAMINER
CHANNAVAJJALA, SRIRAMA T

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No..	Applicant(s)
Office Action Summary	09/446,769	NAKAMURA, KAZUE
	Examiner	Art Unit
	Srirama Channavajjala	2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _10 September 2003_ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-17_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-17_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ . Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892) 4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . 6)☐ Other:

U.S. Patent and Trademark Office

PTOL-326 (Rev. 04-01)   **Office Action Summary**   Part of Paper No. 24

DETAILED ACTION

Response to RCE

CONTINUED EXAMINATION UNDER 37 CFR 1.114 AFTER FINAL REJECTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10 September 2003 has been entered, paper no. # 22, the Amendment filed on 9/10/2003 paper no. # 23 has been entered, and a non-final Office action paper no. # 24 is as stated below:

2.   Examiner acknowledges Applicant's amendment filed on 9/10/2003, paper no.23.

3.   Claims 1,13 have been amended, paper no. # 23.

4.   Examiner acknowledges Applicant's amendment filed on 2/24/2003, paper no.16.

5.   Claims 1 and 13 have been amended, paper no. # 16.

6.   The request filed on October 02, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on Application No. 09/446,769 is acceptable and a CPA has been established, paper no. # 10.

7.   Examiner acknowledges applicant's Amendment, filed on 10/2/2002, paper no. # 12 has been entered.

8.   Claims 1 and 13 amended, paper no. # 12.

9.   Examiner acknowledges Applicant's response to office action filed on

April 10 2002, paper no. # 9.

10.   Examiner acknowledges " ***preliminary amendment***", filed on 12/23/1999.

11.   Claims 1-17 are pending in this application.

Drawings

12.   The drawings filed on 5/5/2000 are <u>approved</u> by the Draftsperson under

37 CFR 1.84 or 1.152.

Information Disclosure Statement

13.   The information disclosure statement filed on 9/19/12000, paper no. # 6 has

been considered and a copy was enclosed with this office action, paper no. # 8.

Priority

14.   Acknowledgment is made of applicant's claim for foreign priority under35 U.S.C.

119(a)-(d), based on International Application No. ***PCT/JP99/02243***, filed on

27 April 1999, ***P10-117537*** filed on 27 April 1998.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

15.   Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lam, US Patent No. 5564037 in view of Kamiyama, US Patent No. 5893139.

16.   As to Claim 1 and 13, Lam details a system which including 'a data storage and

retrieval apparatus having a data processor, including a memory, central processing

unit' [col 4, line 13-34, fig 1, Kamiyama: col 4, line 1-5, fig 1, fig 27], Lam teaches for

example file server element 10 is also known as primary storage device is coupled to

the secondary storage device element 20 as detailed in fig 1, further fig 1 is considered

to be client-server architecture [see col 4, line 24-25], a workstation or computer

element 40 is a microprocessor based computer system, typically a central processing

unit or CPU on a single chip is called microprocessor, as best understood by the

examiner both Lam and Kamiyama teach for example memory, CPU and their

relationship with respect to management of information. It is noted that a computer

system generally consists of a central processing unit or CPU, primary storage,

secondary storage, and input/output devices, further it is common knowledge that CPU

contains ALU, control unit, and temporary storage locations called registers, generally

storage or memory is coupled to CPU because memory may hold programs, data that

are currently in use by the CPU, further instructions and data are moved continuously

between storage or memory and CPU during program execution. It is also common

knowledge that I/O devices are the means by which the CPU communicates with the

external world for example with users or with other computers and like, therefore,

memory coupled to the central processing unit is integral part of both Lam and

Kamiyama's teaching. It is however noted that Lam does not teach 'access information

for the file', although Lam suggests moving preselected files based in infrequently

accessed files [see col 4, line 44-46]; 'first storage medium' [col 4, line 17, fig 1,

element 10], examiner interpreting first storage medium corresponds to Lam's primary

storage device as detailed in fig 1, element 10 or file server, 'performs migration for

transferring a file stored in the first storage medium to a second storage medium' [col 4,

line 29-34, 37-40, line 47-49], Lam teaches for example migration engine element 11

performs migration for transferring of files on a LAN system fig 1, more specifically

NetWare operating system versions 4.x is a Real time data migrator or RTDM feature is

included as detailed in col 2, line 60-62, examiner interpreting second storage medium

corresponds to Lam's second module or secondary storage device element 20 for

example Optical storage device as detailed in fig 1, 'an information acquisition means

for reading said access information from the information file stored in the first storage

medium' [col 6, line 19-24], ' data processor accesses a migrated file' [col 6, line 22-24],

Lam teaches identifying files for migration as detailed in col 6, line 13-15, also Lam

specifically teaches for example command to migrate file(s), reading the file and

sending or transmit file to secondary storage as detailed in fig 2, 'a file opening means

for opening the transferred file in the second storage medium' [see fig 2, especially S1-

S3], "a reading means for reading the stored data from the opened file in the second

storage medium' [see fig 2, S2-S3, col 6, line 21-23], examiner interpreting second

storage medium corresponds to Lam's second module or secondary storage device

element 20 for example Optical storage device as detailed in fig 1, 'loading the read

data in to a predetermined region on the memory of the data processor' [col 7, line 58-

67, col 7, line 15-22, col 8, line 61-64, table 1], loading the read data corresponds to

write data of data block as detailed in table 1, Lam specifically teaches for example

storing data or file based on the predetermined storage hierarchy scheme, 'storing the

same threat without transferring to or storing the read data to the first storage medium

during a reverse migration process' [col 8, line 58-60], Lam specifically teaches

generating sparse file in the primary storage device storing the same contents without

transferring; as best under stood by the examiner, Lam is directed to real time data

migration system, more specifically directed to migration engine, fig 1, element 11,

further Lam also suggests both migration and demigration of data or file for example

command to migrate a file [see fig 2], command to demigrate a file [see fig 3], that

corresponds to migration and reverse migration of file, further migration and demigration

are two distinct commands that are defined to do a specific migration and demigration

process. On the other hand, Kamiyama teaches a system which including "access

information for the file" [see Abstract, fig 2, col 5, line 21-31], also see fig 4 is related to

data vs. access frequency, fig 11 is specifically directed to each data or file block associated with access frequency.

It would have been obvious one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kamiyama into the automatically and transparently migrating data from a file server to an auxiliary storage medium or device of Lam because they are both directed to data storage capable of optimizing the data, more specifically data storage media utilized in a hierarchical structure [see Kamiyama, fig 2, col 1, line 65-67, col 2, line 1-2; Lam Abstract, col 4, line 40-42, especially fig 1, HSM system 2], and both from the same field of endeavor.

One of ordinary skill in the art at the time of the invention would have been motivated to modify the Lam's reference to incorporate the teachings of access information for the file, more specifically modifying Lam's fig 1 to incorporate the access management section, fig 3, element 14 of Kamiyama, because that would have allowed users of Lam's real time migration to control and optimize individual data blocks access frequency, bringing the advantages of optimizing the storage and management of the access frequency of data suggested by Kamiyama [see col 4, line 59-65], thus improving the performance and flexibility of data storage.

17.   As to Claim 2, Kamiyama teaches a system which including 'data processor is a computer' [fig 27, col 15, line 23-25].

18.   As to Claim 3, Lam teaches a system which including 'first storage medium'

[col 4, line 17, fig 1, element 10], examiner interpreting first storage medium

corresponds to Lam's primary storage device as detailed in fig 1, element 10 or file

server, hard disk is integral part of a computer.

19.   As to Claim 4, Lam teaches a system which including 'second storage medium is

a removable medium' examiner interpreting second storage medium corresponds to

Lam's second module or secondary storage device element 20 for example Optical

storage device as detailed in fig 1.

20.   As to Claims 5 and 14, Lam teaches a system which including ' data processor

determines a priority of migration based on a predetermined standard for a plurality of

files stored on the first storage medium and performs the migration' [col 5, line 11-26],

on the other hand, Kamiyama teaches 'file with the highest priority' [fig 6, col 7, line 11-

25], Kamiyama specifically teaches access management section containing low,

intermediate, high, and ultra high frequency management section containing the file

information as detailed in fig 6.

21.   As to Claims 6,15, and 17, Kamiyama teaches a system which including 'file

stored on the first storage medium has an information region for storing file

management information' [fig 7-8, col 7, line 60-67, col 8, line 1-5], 'data region for

storing data'   [col 8, line 2-3], 'information file is generated in the first storage medium'

[col 7, line 60-65], Lam teaches 'all of the data of the data region is transferred to the second storage medium by migration' [col 6, line 13-24], especially, data blocks of the file which are to be migrated are transmitted to the secondary storage device, element 20 as detailed in col 6, line 21-23.

22.   As to Claim 7, Kamiyama teaches a system which including 'information file contains the file management information' [fig 12, element 22a], 'access information to the file transferred to the secondary storage medium' [col 6, line 8-12], Lam teaches 'size information of the file on the first storage medium before the migration' [col 5, line 46-50, col 6, line 5-6, line 11-13].

23.   As to Claim 8 and 16, Kamiyama teaches a system which including 'data region of the file on the first storage medium is opened up after the information file is generated' [col 5, line 21-27], Kamiyama teaches for example data items are stored in a hierarchical structure based on ultra high frequency access data, high frequency access data and like, more specifically, ultra high frequency access data is stored into the semiconductor memory, element 3, while high frequency access data is stored into the magnetic disk device, element 4 as detailed in col 5, line 21-25.

24.   As to Claim 9, Lam details a system which including 'file including the transferred file' [col 6, line 26-27], on the other hand Kamiyama teaches 'access information to the data is formed in the second storage medium' [col 5, line 24-35, fig 2].

25.   As to Claims 10 and 12, Kamiyama teaches a system which including 'file

opening means generates a file descriptor specifying a file transferred to the second

storage medium based on the access information' [col 5, line 7-12, fig 4, fig 7], examiner

interpreting file descriptor corresponds to Kamiyama's file ID as detailed in fig 7.

26.   As to Claim 11, Kamiyama teaches a system which including 'reading means

reads the content of the file opened by the opening means based on the file descriptor

and stores it in a predetermined region of the memory of the data processor'

[col 17, line 10-28].

Response to Arguments

Applicant's arguments filed on 9/10/2003 have been fully considered, for

examiner's response see discussion below:

At page 8 line 1-3, page 9, line 1-4, Claim 1 and 13, applicant argues reading

means opens a migrated file............reverse migration process

As to the above arguments, as best understood by the examiner Lam is directed

to real time data migration system, more specifically real time data migration in a

networked computer system [see Abstract], Lam also specifically teaches open,

reading, transmitting file or file data to other storage or secondary storage by means of

store migration key as detailed in fig 2, further it is noted that Lam specifically teaches

file migrate command(s) through migration engine as detailed in fig 2, col 6, line 17-24.

It is also noted that Lam specifically directed to demigrating file command(s), therefore,

Lam suggests both migration and demigration of data or file for example command to

migrate a file [see fig 2], command to demigrate a file [see fig 3], that corresponds to

migration and reverse migration of file, further migration and demigration are two distinct

commands that are defined and integral part of computer operating system, specifically

Novell NetWare version 3.x operating system [col 2, line 55-67] to do a specific

migration and demigration process.

Conclusion

The prior art made of record

a.   US Patent No.   5564037

b.   US Patent No.   5893139

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure

c.   US Patent No.   5765204

d.   US Patent No.   6094723

e.   US Patent No.   6223247

f.   US Patent No.   6269420

g.   US Patent No.   5403639

h.   US Patent No.   6065065

i.   US Patent No.   5675781

j.   US Patent No.   5978815

k.   US Patent No.   5495607

l.   US Patent No.   5333311

m.   US Patent No.   5257377

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is (703) 308-8538. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time. The TC2100's Customer Service number is (703) 306-5631.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax phone numbers for the organization where the application or proceeding is assigned are as follows:

703/746-7238   **(After Final Communication)**

703/872-9306   **(Offical Communications)**

703/746-7240   **(For Status inquiries, draft communication)**

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.

sc
Patent Examiner.
October 31, 2003.